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ABSTRACT

California's recent investment in teen pregnancy prevention has contributed to the largest decline in teen birth rates and the second largest percentage reduction of all 50 states. California's annual teen birth rate is now similar to the national rate. This occurred while the highest teen birth rate group, Latinas, increased as a proportion of California's total teen population. Nonetheless, California's teen birth rate is unacceptably high. Because of rapidly changing population demographics, California's overall teen birth rate is predicted to begin increasing in 2006, while the number of teen births per year will begin increasing in 2005. Poverty is one of the best predictors of teen birth rates. This report examines trends and activities of the last decade, noting statistical expectations for the future. It offers teen birth rates for year 2000 by California legislative district and a variety of state and local policy options. It concludes that the 40-percent reduction in California's annual teen birth rate over the past decade represents an annual savings to taxpayers of $698 million and a total annual savings to society of $2.2 billion. Four appendices include policy recommendations, a Consensus Statement on Adolescent Sexual Health, notes on birth rate calculation methods and data sources, and assembly district teen births, birth rates, ranks, and estimated costs for year 2000. (Contains 44 references.) (SM)

PUBLIC HEALTH INSTITUTE

No Time for Complacency:
Teen Births in California

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Overview

California has made considerable progress since 1991 in reducing its teen birth rate. The same can be said for the U.S. as a whole; in fact, all 50 states have experienced declining teen birth rates during this period. While California rates in 1991 were substantially above U.S. rates, California rates have declined rapidly, and by 2001 California had dropped below the national rate for the first time in more than 20 years.

While this is good news, several important considerations remind us that now is not the time for complacency:

- In spite of these impressive declines, the teen birth rate in California is still unacceptably high. Rates for both the U.S. and California are higher than those for every other western democracy in the world. In fact, California's rates are *between 4 and 12 times higher* than are the rates for France, Spain, Italy, the Netherlands, and Japan. In 2001 more than 53,000 teens — nearly five percent of all teens aged 15 to 19 — gave birth in California, and many more became pregnant.
- In some California communities teen birth rates are as much as twice the overall statewide rate, with as many as 10% of all teen women between 15 and 19 years old giving birth each year.
- Based on a conservative estimate of the changing demographics of California's youth population, the California Department of Finance predicts that the recent declines will soon reverse. The Department projects that rates actually will begin to accelerate within the next three years, leading to a 23% increase in the number of teen births per year by 2008.
- One of the best predictors of teen birth rates are poverty rates — the higher the poverty rate one year, the higher the teen birth rate tends to be the following year. Because a steep seven-year decline in California poverty rates abruptly ended in 2001, and is likely to have reversed course in 2002, California's decline in teen birth rates is further threatened.
- The current annual cost to taxpayers for teen births in California is estimated to be $1.5 billion. And every year, the total cost to society for teen births in California is $3.3 billion.
- Because of the severe budget challenges California is facing this year and in the foreseeable future, state funding for existing teen pregnancy prevention and reproductive health programs are at risk.

Given the notable progress in California during the last decade, as well as the unmistakable need for further progress and to prevent reversals, it is important to ask two questions:

- ***What has California been doing right?***
- ***What more needs to be done?***

To address these questions, this report examines trends and activities of the last decade, together with statistical expectations for the future. In addition, to accentuate the local and political relevance of these findings, teen birth rates for the year 2000 are provided by California legislative district. Finally, a variety of state and local policy options are presented and discussed.

Background

It is widely agreed across most cultural groups and political ideologies that reducing the number of teen births is an appropriate and important goal[1]. This consensus appear to be based on several factors, including the large percentage of teen births that are non-marital, the association of teen parenthood with welfare dependence, and concern that teens have neither the skills nor support necessary to be effective parents.

Teen parenting is not a new phenomenon, in fact, 40 years ago a higher percentage of American teens became parents each year than today (9% in 1960 versus 5% in 2000; Ventura et al., 2001). What has changed, and continues to increase each year, is the proportion of births to unmarried teens. In 1960, 15% percent of all teen births were to unmarried teens versus 79% in 1999 (Ventura et al., 2000). It is important to note that equivalent increases in the proportion of non-marital births have occurred in all age groups, for example, among 20 to 24 year old women, 5% of all births were non-marital in 1960 versus 48% today. Yet teens continue to have a substantially higher percentage of non-marital births than any other age group.

Consequences to teen mothers[2]

Because teens who give birth tend to have preexisting disadvantages in many respects compared to those who do not, the perceived consequences of teen births have been subject to considerable debate, and are often not conclusive. Increasingly sophisticated research has recently begun to show that for many mothers, the negative outcomes attributed to teen births are not very different than what would have been expected had the mother delayed birth until after her teens. Nevertheless, most experts believe that credible research evidence supports an added effect of teen parenthood on several important negative consequences (Coley & Chase-Lansdale, 1998).

Adolescents who become mothers tend to exhibit poorer psychological functioning, lower levels of educational attainment and high school completion, more single parenthood, and less stable employment than those with similar backgrounds who postpone childbirth (Coley & Chase-Lansdale, 1998). Although teen mothers who stay in school are just as likely to graduate as non-mothers, those who drop out before or shortly after childbirth are only half as likely to return to school and graduate as are non-mother drop-outs (Upchurch & McCarthy, 1990; Coley & Chase-Lansdale, 1998).

Other potential negative consequences have not been sufficiently researched, such as potential consequence resulting from interruptions of key processes of emotional and social development of the teen mothers by early parenthood responsibilities. Based on well-established knowledge of adolescent developmental needs and progressions, however, researchers believe that these

[1] A different perspective among sociologists such as Kristin Luker (1996) and Mike Males (1999) is gaining attention, however. These researchers argue that the problem is not one of teen births per se, but rather the problem is about births to unmarried financially stressed women, both teens and older ages. According to these researchers, a focus on teen births unfairly scapegoats teens and does not address the need for appropriate solutions.

[2] This section and the two that follow draw heavily from a comprehensive overview article by Coley and Chase-Lansdale (1998).

interruptions are likely to yield harmful consequences related to psychological distress and possible depression (Coley & Chase-Lansdale, 1998).

Teen mothers spend more of their parenting years as single mothers than do older mothers, and have higher divorce rates (Bennett et al., 1995). To what extent these differences are a result of teen parenthood, as opposed to pre-existing factors that cause both teen pregnancy and marital instability, is not fully understood (Bennett et al., 1995; Coley & Chase-Lansdale, 1998).

Relative to older mothers, teen mothers tend to experience more pregnancy-related problems and have less healthy infants, although these differences overall are small and decreasing over time, and are highly related to access to and use of prenatal care (Scholl et al., 1994; Coley & Chase-Lansdale, 1998). One major concern is that of all age groups, pregnant teens are most likely to smoke during pregnancy, and unlike other age groups, smoking rates for pregnant teens have increased over the last five years (Mathews, 1998). Smoking among pregnant and parenting teens appears to be highly related to pregnancy and early parenting related stress, and is especially resistant to successful cessation. Even teen mothers who successfully quit smoking during pregnancy tend to relapse immediately or shortly after birth (Constantine et al., 2002).

Consequences to the children of teen mothers

Another important area of expected deficits as a result of teenage childbearing is that of parenting practices, and it is commonly believed that teen mothers have more difficulty with parenting than do older mothers. Teen mothers have been found to be less verbal with their babies, to provide a less stimulating social environment, to perceive their babies as more difficult, and to have unrealistic expectations. While this makes intuitive sense given that teen moms are more likely to face the transition to parenthood in an unsupportive and less stable environment, it is important to note that research predominately has compared teen mothers to older middle class mothers, without taking into account preexisting socioeconomic differences that could explain the differences in parenting practices (Coley & Chase-Lansdale, 1998; Brooks-Gunn & Chase-Lansdale, 1995; Brooks-Gunn & Furstenberg, 1986). In the few studies that do take these factors into account, the relative difficulties of teen parents compared to older parents disappear or greatly diminish (Benasich & Brooks-Gunn, 1996; Chase-Lansdale, Brooks-Gunn, & Zamsky, 1994; Wakschlag et al., 1996).

Preschool children of teen mothers tend to show some delay of cognitive development as well as more behavior problems and more aggressive behavior than children of older mothers, while adolescent children of teen mothers experience higher rates of grade failure, delinquency, and early sexual activity (Furstenberg et al., 1987; Moore et al., 1997; Coley & Chase-Lansdale, 1998). Children of teen mothers are also more likely to experience abuse and neglect, and to be placed in foster care (George & Lee, 1997). Once again, however, the research from which these conclusions arise generally does not sufficiently consider pre-existing socioeconomic difference; a much stronger base of evidence can be found on the negative effects of poverty, regardless of age, on family and child functioning (Duncan & Brooks-Gunn, 1997; McLoyd, 1990).

Consequences to fathers

As in all mother's age groups, fathers tend to be two to three years older on average than teen mothers (Landry & Forrest, 1995; Lindberg et al., 1997). Likewise, the proportion of fathers who are five or more years older than the mother is similar in the 15 to 17 year old mothers' age group (27%) to the 18-30 year old mothers' age group (26%; Lindberg et al., 1997). Fathers to children of teen mothers, whether teenaged or older themselves, tend to start with low educational attainment and low incomes, and to live in low-income communities (Lerman, 1993). As a result of early parenthood, these fathers are likely to work and earn more initially, but tend to achieve less education and lower earnings over time than their non-parenting peers, most likely due to the to early focus on working at the expense of education (Brien & Willis, 1997; Coley & Chase-Lansdale, 1998). There is also some indication that teen fathers have adjustment difficulties to parenting and unrealistic expectations for their children (Robinson, 1988; Coley & Chase-Lansdale, 1998) but this area has not been well studied.

Overall, it appears that many of the detrimental effects of teen parenting on mothers, children, and fathers have been overstated or inappropriately attributed to teen parenting rather than to pre-existing socioeconomic factors, and more research is needed to better understand these effects. At the same time, it is clear that there are important detrimental effects of the early parenting experience — on the teen mothers, the children, and the fathers — over and above what can be predicted from socioeconomic factors alone.

Costs to taxpayers and total costs to society

Several analyses of long-term costs associated with teen childbearing have been conducted during the last 20 years (Burt & Haffner, 1985; Brindis & Jeremy, 1988; Holtz, McElroy & Sanders, 1996; Kreutzer, 1997; Maynard, 1997; Feijoo, 1999). These analyses have yielded a wide range of cost estimates, depending on the categories of costs included, the assumptions made, and the statistical models employed. While there is no gold standard to use in evaluating cost analysis methodologies and estimates, the most comprehensive and rigorous set of analyses was published by a group a nationally prominent researchers from the fields of economics, demographics, family policy, and health policy, led by Rebecca Maynard (1997).

Integrating the series of studies conducted by these researchers, Maynard estimated the average annual cost to taxpayers in the United States for each birth to a school-age (age 17 years or younger) teen mother. Maynard employed conservative assumptions, and used the most directly attributable costs, including tax revenue costs based on mother's and father's income and consumption, public assistance direct costs such as welfare and medical assistance as well as the associated administrative costs of these programs, costs for increased foster placement and incarceration of children, and tax revenue costs based on children's incomes and consumption when they reach young adulthood. Some costs, such as public assistance, were averaged over the first 13 years of parenthood, while others, such as adult children's income-related costs, were averaged over longer periods of time. Appropriately, and unlike other less rigorous cost analyses, Maynard estimated net costs, adjusted for estimated costs in these same categories had the teen mother delayed her birth until age 20 or 21. The resulting net cost estimate was $2,831 (in 1996 dollars) per year per school-aged teen birth. Adjusting for average annual inflation of 2.4%, this would be equivalent to $3,108 per year for each school-aged teen birth, in year 2000 dollars.

Although Maynard did not estimate costs for teens aged 18 and 19, net costs for older teens can be extrapolated, again relative to what the costs would have been for 20-21 year olds, by assuming half the average annual cost per birth to school-aged mothers (because 18-19 year old mothers are half as far from age 21 as are the 17.4 years average school-aged mothers). This provides an extrapolated estimate of $1,554 per year per birth for an 18-19 year old teen mother, in year 2000 dollars. *The age-weighted average annual taxpayer cost associated with each teen birth, across ages 15 to 19, is $2,129*, in year 2000 dollars.

In addition to taxpayer costs, Maynard estimated total costs to society, which included in addition to taxpayer costs, estimated changes in earnings of the teen mothers, fathers, and children when they reached young adulthood, and privately paid medical costs. Estimates of these costs were less directly anchored in data and therefore required additional assumptions. Yet the results appear plausible — these costs were estimated to be approximately two and one third times the costs to taxpayers, or $6,315 per birth per year in 1996 dollars, yielding $6,934 in year 2000 dollars. Extrapolating again to 18-19 year olds yields $3,467 for that age group. After age-weighted averaging, *societal costs are estimated to be $4,750 per year for each teen birth*, in 2000 dollars.

Applying these costs to California, it was possible to estimate total annual outlays and losses for 13 yearly cohorts of teen births in the pipeline at any given time (13 years was the interval Maynard used in calculating average annual per birth costs). To estimate total annual taxpayer costs, the number of births in year 2001 (53,776) was multiplied by the inflation-adjusted, age-weighted individual taxpayer cost per birth, per year ($2,129), and then multiplied by 13. The same was done for societal costs, using the per birth, per year cost of $4,750. These calculations yielded the following estimates:

- ***current annual net costs to taxpayers of $1.5 billion, and***
- ***current annual total net costs to society of $3.3 billion.***

California Teen Birth Rates, Trends, and Projections

This section presents and compares recent data on teen birth rates in California, the US, other countries, and racial/ethnic groups within California. Trends over the last decade are then discussed. Finally, projections for the future are considered.

Teen Birth Rates

Teen birth rates are typically reported as the number of births per thousand in one year among female teens between the ages of 15 and 19, within a defined group or geographic area. The teen birth rate for California in 2001 was 45.2, meaning that for every thousand female teens in California between 15 and 19 years old, just over 45 gave birth that year. Another way of saying this is that four and one half percent of California teens women gave birth in year 2000 (4.5 out of 100). In actual numbers, this translates to 53,883 California teen births in 2001. For the purposes of comparing between different sized groups and areas, however, it is more useful to talk about rates per thousand.

TABLE 1. Teen Birth Rates by Country, 1985 and 1995, and Percent Change

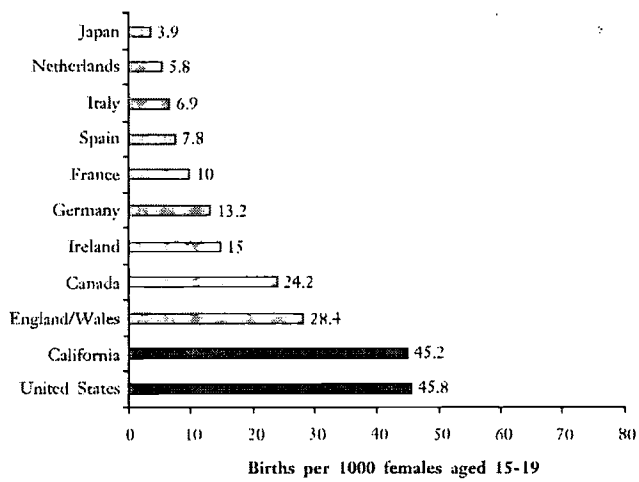
COUNTRY	1985 TEEN BIRTH RATE	1995 TEEN BIRTH RATE	PERCENT CHANGE 1985–1995
Japan	4.0	3.9	-4.0
Switzerland	6.7	5.7	-15.0
Netherlands	6.8	5.8	-15.0
Italy	12.7	6.9	-46.0
Sweden	11.0	7.7	-30.0
Spain	18.5	7.8	-58.0
Denmark	9.1	8.3	-9.0
Belgium	12.6	9.1	-28.0
Slovenia	41.3	9.3	-77.0
Finland	13.8	9.8	-29.0
France	16.9	10.0	-41.0
Greece	36.4	13.0	-64.0
Germany	12.1	13.2	9.0
Norway	17.8	13.5	-24.0
Ireland	16.6	15.0	-10.0
Austria	24.4	15.6	-36.0
Israel	26.1	18.0	-31.0
Australia	22.7	19.8	-13.0
Croatia	38.4	19.9	-48.0
Czech Republic	53.3	20.1	-62.0
Portugal	33.0	20.9	-37.0
Poland	35.1	21.1	-40.0
Iceland	33.7	22.1	-34.0
Northern Ireland	28.7	23.7	-17.0
Canada	23.2	24.2	4.0
Latvia	42.6	25.5	-40.0
Scotland	30.9	27.1	-12.0
Czechoslovakia	52.8	27.5	-48.0
England and Wales	29.5	28.4	-4.0
Hungary	51.5	29.5	-43.0
Yugoslavia (Federal Rep)	48.4	32.1	-34.0
Slovak Republic	51.8	32.3	-38.0
Estonia	43.9	33.4	-24.0
New Zealand	30.6	34.0	11.0
Lithuania	22.1	36.7	66.0
Belarus	32.8	39.0	19.0
Romania	57.3	42.0	-27.0
Macedonia	47.5	44.1	-7.0
Russian Federation	46.9	45.6	-3.0
Bulgaria	77.4	49.6	-36.0
Georgia	49.1	53.0	8.0
Moldova	42.6	53.2	25.0
Ukraine	51.7	54.3	5.0
United States	51.0	54.4	7.0
Armenia	57.0	56.2	-1.0

Data are from Singh and Darroch, 2000

The annual teen birth rate in California is now very similar to the rate for the U.S. overall: 45.2 per 1,000 for California versus 45.8 per 1,000 for the US. To get a better understanding of the meaning of these rates, it is helpful to consider how these rates compare to other countries, and how rates differ among racial/ethnic groups in California.

Historical teen birth rates for 46 developed countries were compiled by Singh and Darroch (2000). Across the 45 countries for which recent data were available, teen birth rates for 1995 ranged from a low of 3.6 in Japan to a high of 56.2 in Armenia (see table 1). *The comparative U.S. rate (for 1995) was 54.4, second highest after Armenia, of the 45 countries.* The U.S. rate was higher than the rates for Belarus, Bulgaria, Croatia, Macedonia, Romania, Russia, and the Yugoslavia Republic, among others. In fact, the U.S. rate in 1995 was 14 times higher than Japan, 9 times higher than the Netherlands, 8 times higher than Italy, 7 times higher than Spain, 5 times higher than France, nearly 4 times higher than Ireland, and twice as high as Canada. Although more recent international data are not yet widely available, it is reasonable to assume that the declines in the U.S. rate since 1995 have not substantially affected the relative position of the U.S. to these other countries. This is because most of these countries were experiencing declines in their teen birth rates over the ten years prior to their 1995 data, and these declines were likely to continue.

FIGURE 1. Teen Birth Rate Comparisons for California, US, and Selected Countries

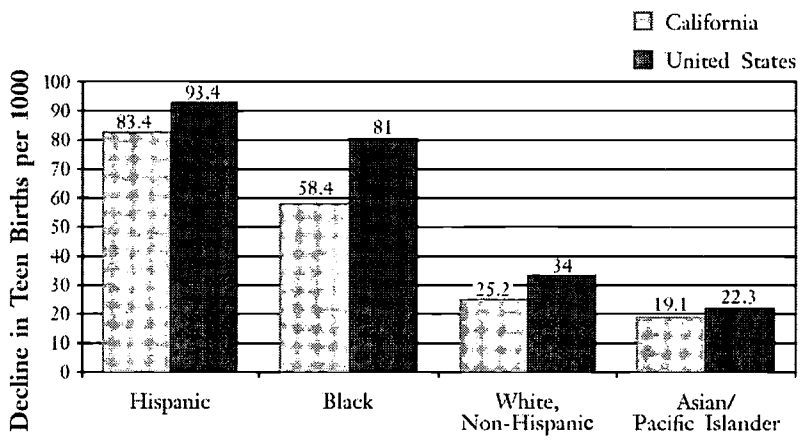


International data are for 1995/96, from Singh and Darroch, 2000; California and United States data are for 2001, from Martin et al., 2002

Another useful comparison is to examine the differences between racial ethnic/groups within California, and for the U.S. as a whole. The most recent federally compiled race-specific data that are available by state are for 1999. Figure 2 compares the 1999 birth rates for California's largest racial/ethnic groups. This figure illustrates that:

- in California the Latina teen birth rate was more than three times higher than the white non-Latina and Asian/Pacific Islander rates;[3]
- in California the African-American teen birth rate was more than two times higher than the white non-Latina rate and Asian/Pacific Islander rates; and
- although the 1999 U.S. rates were higher than the California rates within every racial/ethnic group, the same relative pattern held nationally: the Latina rate was highest, followed by African-American, white non-Latina, and Asian/Pacific Islander, with approximately the same relative proportions.[4]

FIGURE 2. California and US Teen Birth Rates by Race/Ethnicity, 1999



Data from Ventura et al., 2001

Trends

The national teen birth rate of 62.1 births per thousand teen women ages 15 to 19 in 1991 declined by 26% over the past decade to its low of 45.8 in 2001 (see table 2 and figure 3). This represents a reduction of 16.3 births per thousand teen women. Teen birth rates in all 50 states have declined over this same period. While all states have experienced declines, there was wide variation in percent reductions across states, ranging from a low of 13% reduction in Texas, to high of a 42% reduction in Alaska (see table 2).

[3] Note however that rates vary substantially across Asian/Pacific islander subgroups, with some subgroups, such as Laotians, thought to exceed even Latinas in teen birth rates (Weitz, 2002). Because female teen population estimates for these smaller subgroups are less reliable than for the larger groups, the exact teen birth rates are unknown

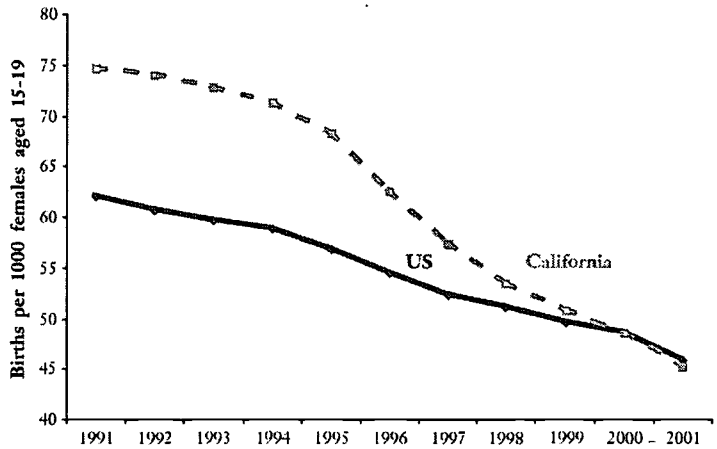
[4] The reader might be aware that in 1999 California's teen birth rate was higher than the U.S. rate, and wonder how then the California rates could be lower than the U.S. rates within every racial/ethnic group. This is because the highest teen birth rate group – Latinas – is much more heavily represented in California than in the U.S. as a whole.

TABLE 2. Birth rates for teenagers age 15-19 years by state and total US, 1991 and 2001, with rate change and percent change, ordered by rate change.

STATE	1991	2001	PERCENT CHANGE	RATE CHANGE
California	74.7	45.2	-39.5	-29.5
Alaska	65.4	37.7	-42.4	-27.7
Michigan	59	37.2	-36.9	-21.8
Florida	68.8	49.3	-28.3	-19.5
Nevada	75.3	56.4	-25.1	-18.9
Mississippi	85.6	66.7	-22.1	-18.9
Washington	53.7	34.9	-35	-18.8
Missouri	64.5	46.1	-28.5	-18.4
Louisiana	76.1	57.8	-24	-18.3
Ohio	60.5	42.2	-30.2	-18.3
Kentucky	68.9	51.4	-25.4	-17.5
Illinois	64.8	47.3	-27	-17.5
Tennessee	75.2	58.4	-22.3	-16.8
Maine	43.5	27.1	-37.7	-16.4
United States	62.1	45.8	-26.2	-16.3
Hawaii	58.7	42.5	-27.6	-16.2
Alabama	73.9	57.8	-21.8	-16.1
Maryland	54.3	38.2	-29.7	-16.1
Wyoming	54.2	38.6	-28.8	-15.6
Arkansas	79.8	64.2	-19.5	-15.6
South Carolina	72.9	57.4	-21.3	-15.5
Arizona	80.7	65.3	-19.1	-15.4
Georgia	76.3	60.9	-20.2	-15.4
Vermont	39.2	23.9	-39	-15.3
New Mexico	79.8	64.5	-19.2	-15.3
North Carolina	70.5	55.2	-21.7	-15.3
Virginia	53.5	39.4	-26.4	-14.1
Oklahoma	72.1	58	-19.6	-14.1
Oregon	54.9	40.9	-25.5	-14
Idaho	53.9	40.6	-24.7	-13.3
Indiana	60.5	47.2	-22	-13.3
Pennsylvania	46.9	33.6	-28.4	-13.3
Delaware	61.1	48.2	-21.1	-12.9
Massachusetts	37.8	25	-33.9	-12.8
Colorado	58.2	45.7	-21.5	-12.5
Kansas	55.4	43	-22.4	-12.4
New Hampshire	33.3	21	-36.9	-12.3
West Virginia	57.8	45.5	-21.3	-12.3
New York	46	34.1	-25.9	-11.9
New Jersey	41.6	29.9	-28.1	-11.7
Montana	46.7	35.6	-23.8	-11.1
Connecticut	40.4	29.4	-27.2	-11
Texas	78.9	68.5	-13.2	-10.4
South Dakota	47.5	37.1	-21.9	-10.4
Wisconsin	43.7	33.4	-23.6	-10.3
Utah	48.2	38.2	-20.7	-10
Iowa	42.6	33	-22.5	-9.6
Minnesota	37.3	27.9	-25.2	-9.4
North Dakota	35.6	27.2	-23.6	-8.4
Rhode Island	45.4	37.4	-17.6	-8
Nebraska	42.4	36	-15.1	-6.4

Data from Martin et al., 2002, page 9.

FIGURE 3. Teen Birth Rates for California and US, 1991 to 2001



Data from Martin et al., 2002; and Ventura, et al., 2001

Although substantially above the US rate in 1991, by 2001 California had dropped below the national rate — to 45.2 births per thousand teen women — for the first time in more than a decade. Further, California achieved the largest absolute decline of all 50 states in birth rate reduction (a reduction of 30 births per thousand teen women), and the second largest decline in percentage reduction (40%, after Alaska's 42%), from 1991 to 2001 (see table 2). In terms of number of births, California's decline represents a reduction of approximately 18,000 annual teen births — from 72,000 in 1991 to 54,000 in 2001.

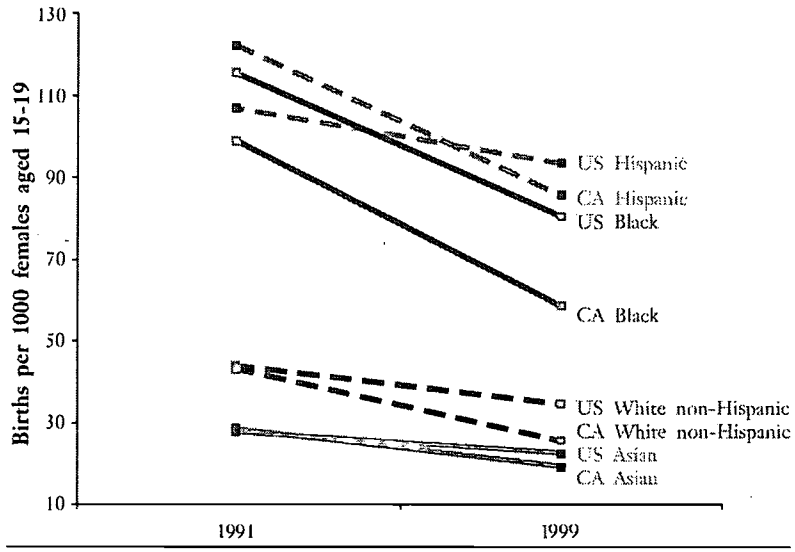
Considering again California's largest racial/ethnic groups, while all four groups showed declines from 1991 to 1999,[5] these declines varied substantially by group. Figure 4 shows that the decline among Latina teens was the steepest. However, Latina teens, in spite of the large decline, still have the highest teen birth rate of any race or ethnic group in California. It is also noteworthy that while the US Latina teen birth rate has declined moderately, the California rate has declined substantially.

Projections

It is useful to look into the future and assess as carefully as possible whether the trends of the last ten years are likely to continue, to level off, or to reverse. Of course all projections are just that, involving assumptions and reliance on a subset of known but imperfect predictors that appear to be most relevant. Yet when properly grounded, projections can provide important insights into the future.

[5] Federally complied state-level teen birth rate data by race/ethnicity currently are most recently available for 1999 (Ventura et al., 2001). See discussion in Appendix C on data sources.

FIGURE 4. Teen Birth Rates for California and US, 1991 to 1999, by Race/Ethnicity



Data from Ventura et al., 2001

Because of rapidly changing population demographics, the California Department of Finance (DOF, 2002) projects that the overall teen birth rate decline in California will reverse itself and begin to increase in 2006, while the number of teen births per year is projected to reverse its decline one year sooner, in 2005. These projections do not assume a teen birth rate increase in any race/ethnicity subgroup, but are based primarily on the growth of the Latina teen population relative to other groups. Because the Latina teen birth rate is substantially higher than the overall state rate, as this group increases in proportional size relative to the other lower birth rate groups, overall rates are projected to increase even without birth rate increases in any individual group.[6]

Although the DOF projects small increases in teen birth rates initially, these small rate increases result in substantial increases in teen births as the teen population base grows. For example, within five years, (by 2008), the annual number of teen births is projected to exceed 66,000. This represents approximately 12,500 more teen births than in 2001 — a phenomenal 23% increase.

These projections are already striking, yet the DOF employs a conservative projection methodology that does not take into account two key factors: (1) the changing racial/ethnic composition of the teen population each year as older teens age out and pre-teens enter the teen age group, and (2) the differential birth rates within each group. As a result, the DOF projections should be considered a conservative minimum estimate. More precise projections resulting from use of annually adjusted race/ethnicity proportions would yield an earlier

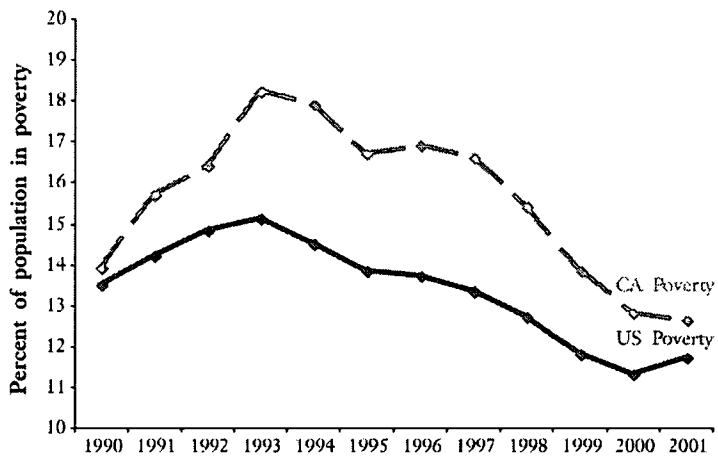
[6] This well known type of phenomenon is referred to among statisticians as *Simpson's Paradox*, (Simpson, 1951; Mittal, 1991).

turnaround in teen birth rate reductions, larger projected increases over time in the teen birth rate, and a larger number of projected teen births each year.

One of the most accurate predictors of teen birth rates are poverty rates — the higher the poverty rate one year, the higher the teen birth rate tends to be in following years[7]. Figure 5 shows poverty rates from 1990 through 2001 for both California and the U.S. as a whole. Although not exactly equivalent, the general trends of the poverty rates approximate the flow of the teen birth rates for both California and US. This can be expressed statistically by calculating the correlations between the teen birth rates from 1991 to 2001 and the poverty rates lagged by one year (from 1990 to 2000), yielding correlations of .90 for California and .97 for the US. These are considered very high correlations[8].

These correlations do not bode well for the future. Because a steep seven-year decline in California poverty rates abruptly ended in 2001 (see figure 5), and is likely to have reversed course in 2002, California's decline in teen birth rates is further threatened.

FIGURE 5. Poverty Rates, California and US, 1990 to 2001



Data from U.S. Census Bureau, 2002; 2003.

The above two methods of prediction, by demographic projections, and by prior year poverty rates, are potentially additive. This means that even without the increase in poverty rates, demographic projections alone predict increasing teen birth rates. Similarly, even without the demographic changes, the end of the poverty rate decline predicts, at best, the

[7] Strictly speaking, youth poverty rates are considered the best predictors, however annual state-level all-persons poverty rates are more readily available than are youth poverty rates.

[8] Note that if the lag is reversed so that the previous year's birthrate is correlated with the current year's poverty rate, the correlations are substantially reduced, to .45 in California and .82 in the U.S., but still moderate in size. What this shows is that there are additional factors jointly affecting the year-to-year variation in both poverty and teen birth rates, yet the larger correlations of teen birth rates with the preceding year's poverty rate relative to its correlation with the following year's poverty rate demonstrates the direct predictive effect of poverty on teen birthrates over time.

end of the teen birth rate decline. And if both predictions are correct, then teen birth increases could be substantial.

In summary, a minimal conservative projection by the California Department of Finance, projects a 23% increase in annual teen births in California within 5 years, to result in approximately 12,500 more California teen births in 2008 than there were in 2001. A more comprehensive projection methodology, and taking into account the recent leveling off of poverty rate decreases, however, would yield a larger and more rapidly occurring teen birth rate increase.

Legislative District Analysis

To accentuate the local and political relevance of these findings, teen birth rates for the year 2000 were analyzed by California senate district[9]. This analysis helps address the question of whether the problem is limited to a few geo-political areas, or is more widespread.

Table 3 provides teen birth rates, births, birth rate ranks, and annual costs for each of California's 40 senate districts. (A similar presentation for California assembly districts is provided in Appendix D.) Across all districts, teen birth rates ranged from a high of 94.8 (in the 16th district) to a low of 17.0 (in the 35th district). Of the 40 districts, 18 had teen birth rates higher than the year 2000 California average of 48.5. While all areas of the state have high teen birth rate districts, these are most frequently found in Los Angeles County (districts 20, 22, 24, 25, 26, 27, 30, and 32), the Central Valley (districts 12, 14, and 16), and the Imperial Valley (districts 37 and 40). Additional information, including cost estimates by senate district, is found on the individual district fact sheets.

Comparing these district data to the international data provided in table 1 further illustrates that every one of California's 40 state senate districts had higher teen birth rates than, for example, Japan (3.6), Netherlands (5.8), Italy (6.9), France (10.0), Germany (13.2), and Ireland (15.0).

These comparisons illustrate the opportunity for improvement across the entire state and in all types of communities and locations, as well as the special need in certain high rate areas. They demonstrate the need for a holistic approach that starts at the impacted community level and percolates up to the state and national level.

[9] The most recent year of availability for the U.S. census population data by zip code tabulation area needed to compute rates by district is 2000. See Appendix C for a description of methods used.

TABLE 3. Senate District Teen Births, Birth Rates, Ranks, and Estimated Annual Costs, Year 2000

DISTRICT	SENATOR	COUNTIES IN DISTRICT	TEEN BIRTHS	TEEN BIRTH RATE (PER 1000)	TEEN BIRTH RATE RANK	ESTIMATED ANNUAL TAXPAYER COSTS*	ESTIMATED ANNUAL SOCIETAL COSTS*
1	Thomas "Rico" Oller (R)	Alpine, Amador, Calaveras, El Dorado, etc.	603	23.6	37	$17,000,000	$37,000,000
2	Wesley Chesbro (D)	Humboldt, Lake, Mendocino, Napa, etc.	1,039	36.4	26	$29,000,000	$64,000,000
3	John Burton (D)	Marin, San Francisco, Sonoma	480	27.8	31	$13,000,000	$30,000,000
4	Samuel Aanestad (R)	Butte, Colusa, Glenn, Placer, etc.	1,258	39.2	23	$35,000,000	$78,000,000
5	Michael Machado (D)	Sacramento, San Joaquin, Solano, Yolo	1,679	48.1	19	$46,000,000	$104,000,000
6	Deborah Ortiz (D)	Sacramento	1,570	53.7	13	$43,000,000	$97,000,000
7	Tom Torlakson (D)	Contra Costa	645	24.8	35	$18,000,000	$40,000,000
8	Jackie Speier (D)	San Francisco, San Mateo	418	19.4	39	$12,000,000	$26,000,000
9	Don Perata (D)	Alameda, Contra Costa	1,255	48.7	18	$35,000,000	$77,000,000
10	Liz Figueroa (D)	Alameda, Santa Clara	806	31.3	28	$22,000,000	$50,000,000
11	Byron Sher (D)	San Mateo, Santa Clara, Santa Cruz	615	24.5	36	$17,000,000	$38,000,000
12	Jeff Denham (R)	Madera, Merced, Monterey, San Benito, etc.	2,217	64.6	6	$61,000,000	$137,000,000
13	John Vasconcellos (D)	Santa Clara	1,312	51.3	16	$36,000,000	$81,000,000
14	Charles Poochigian (R)	Fresno, Madera, Mariposa, San Joaquin, etc.	1,391	49.9	17	$38,000,000	$86,000,000
15	Bruce McPherson (R)	Monterey, S. Luis Obispo, Santa Barbara, etc.	1,097	38.3	24	$30,000,000	$68,000,000
16	Dean Florez (D)	Fresno, Kern, Kings, Tulare	3,104	94.8	1	$86,000,000	$192,000,000
17	W. "Pete" Knight (R)	Los Angeles, San Bernardino, Ventura	1,332	43.2	21	$37,000,000	$82,000,000
18	Roy Ashburn (R)	Inyo, Kern, San Bernardino, Tulare	1,984	63.5	7	$55,000,000	$123,000,000
19	Tom McClintock (R)	Los Angeles, Santa Barbara, Ventura	816	27.6	32	$23,000,000	$50,000,000
20	Richard Alarcón (D)	Los Angeles	1,747	57.7	11	$48,000,000	$108,000,000
21	Jack Scott (D)	Los Angeles	524	26.4	33	$15,000,000	$32,000,000
22	Gilbert Cedillo (D)	Los Angeles	1,873	74.4	2	$52,000,000	$116,000,000
23	Sheila Kuehl (D)	Los Angeles, Ventura	647	30.1	29	$18,000,000	$40,000,000
24	Gloria Romero (D)	Los Angeles	1,872	60.2	9	$52,000,000	$116,000,000
25	Edward Vincent (D)	Los Angeles	1,596	62.1	8	$44,000,000	$99,000,000
26	Kevin Murray (D)	Los Angeles	1,359	59.5	10	$38,000,000	$84,000,000
27	Betty Karnette (D)	Los Angeles	1,623	53.1	14	$45,000,000	$100,000,000
28	Debra Bowen (D)	Los Angeles	783	36.8	25	$22,000,000	$48,000,000
29	Bob Margett (R)	Los Angeles, Orange, San Bernardino	660	23.1	38	$18,000,000	$41,000,000
30	Martha Escutia (D)	Los Angeles	1,665	57.6	12	$46,000,000	$103,000,000
31	James Brulte (R)	Riverside, San Bernardino	1,327	41.1	22	$37,000,000	$82,000,000
32	Nell Soto (D)	Los Angeles, San Bernardino	2,632	73.9	4	$73,000,000	$163,000,000
33	Richard Ackerman (R)	Orange	608	25.1	34	$17,000,000	$38,000,000
34	Joseph Dunn (D)	Orange	2,100	71.9	5	$58,000,000	$130,000,000
35	Ross Johnson (R)	Orange	434	17.0	40	$12,000,000	$27,000,000
36	D. Hollingsworth (R)	Riverside, San Diego	774	29.1	30	$21,000,000	$48,000,000
37	Jim Battin (R)	Riverside	1,504	52.6	15	$42,000,000	$93,000,000
38	Bill Morrow (R)	Orange, San Diego	1,177	45.4	20	$33,000,000	$73,000,000
39	Dede Alpert (D)	San Diego	865	33.1	27	$24,000,000	$53,000,000
40	D. Moreno Ducheny (D)	San Diego, Imperial, Riverside	2,284	74.1	3	$63,000,000	$141,000,000

Costs represent estimates of annual outlays and losses for 13 yearly cohorts of teen births in the pipeline at any given time. Cost analysis methods are described in detail in the report.

California Policies and Programs of the Last Decade

During the past decade, California has been the national leader in focusing on and investing in research-based policies and programs for positive adolescent development and teen pregnancy prevention. This leadership spans the administrations of two governors, one Republican and one Democratic. California's leadership is evidenced in several areas:

- refusal to participate in the federal abstinence-only-until-marriage education program;
- state-funded reproductive health programs administered by the California Department of Health Services;
- state-funded teen pregnancy prevention programs administered by the California Department of Health Services and the California Department of Education; and
- program and policy grant initiatives provided by philanthropic foundations in California, led by The California Wellness Foundation.

Refusal of Abstinence-Only-Until-Marriage Education Funding and Conditions

Perhaps the most significant policy decision by California related to teen births during the last decade was the decision not to accept Section 510, Title V, abstinence-only-until-marriage federal funds, and its matching state funds requirements (three dollars of state funds required for every four dollars of federal funds). This program is a result of 1996 welfare reform legislation, providing $50 million annually[10] to enable states to provide abstinence education, strictly defined as:

1. Has as its exclusive purpose, teaching the social, psychological, and health gains to be realized by abstaining from sexual activity;
2. Teaches abstinence from sexual activity outside marriage as the expected standard for all school-age children;
3. Teaches that abstinence from sexual activity is the only certain way to avoid out-of-wedlock pregnancy, sexually transmitted diseases, and other associated health problems;
4. Teaches that a mutually faithful monogamous relationship in the context of marriage is the expected standard of human sexual activity;
5. Teaches that sexual activity outside of the context of marriage is likely to have harmful psychological and physical effects;
6. Teaches that bearing children out of wedlock is likely to have harmful consequences for the child, the child's parents, and society;
7. Teaches young people how to reject sexual advances and how alcohol and drug use increase vulnerability to sexual advances; and
8. Teaches the importance of attaining self-sufficiency before engaging in sexual activity.

[10] Funding has increased for this and related programs since 1996. The current administration's proposed 2004 federal budget contains a total of $135 million for abstinence-only-until-marriage programs.

Most parents and health professionals support *abstinence-based* comprehensive sexuality education programs for adolescents — programs that combine promotion of remaining abstinent with knowledge and resources for those adolescents who are or will become sexually active. However, the federal funding that California refused requires *abstinence-only-until-marriage* instruction, for example, it strictly prohibits any instruction in or promotion of the use of contraceptive methods (based on U.S. Department of Health and Human Services interpretations of the legislative intent, Maternal and Child Health Bureau, 1997).

During 1998, the program's first year, all 50 states applied for grants through this program, and California was one of only two states (the other was New Hampshire) to decline the funds. Beginning in the second year of the program, all states except California applied for and received funds. Because this program required strategies inconsistent with scientific research on effectiveness (Institute of Medicine, 2001), and because California had already began its own considerable investment in research-based policies and programs, it's refusal to participate in this program was a logical, and it now appears effective, choice.

Initiatives of the California Department of Health Services' Office of Family Planning

A comprehensive and sophisticated combination of programs and other strategies have been administered by the California Department of Health Services' Office of Family Planning (OFP). These include the *Family PACT Program*, *Teen Smarts*, and a four tiered teen pregnancy prevention initiative, all described below.

The Family PACT Program ($340 million/year; services to teens comprise approximately 20% of all Family PACT services) is California's innovative approach to provide comprehensive family planning services to low-income women and men, including teens. The goals of this public health program are to promote optimal reproductive health and to reduce unplanned pregnancy by lowering the barriers that many women and men with unmet need face in obtaining family planning services. In 1996, California enacted legislation to create Family PACT, and effective December 1, 1999, a five-year federal Medi-Cal Demonstration Project waiver was granted, allowing access to federal matching funds at a rate of 90% of total costs. In fiscal year 1999-2000, Family PACT served about one million women. This historic, unprecedented statewide program fills a gap in health services for the working poor and uninsured by providing comprehensive services needed to prevent unintended pregnancy and promote reproductive health. Family PACT ensures access to all Food and Drug Administration-approved contraceptive methods, pregnancy testing, and the option of sterilization for women and men. The program also includes sexually transmitted infection testing and treatment, HIV screening, as well as cancer screening.

TeenSMART was designed by the OFP to provide optimal reproductive health care, including enhanced counseling, pregnancy prevention and sexually transmitted disease risk reduction to adolescents enrolled in Family PACT TeenSMART clinics. TeenSMART incorporates effective components of demonstration programs previously funded through OFP into an ongoing service model that strengthens the reproductive health care focus of the program. In addition to TeenSMART counseling services, 23 providers have agency contracts to provide outreach in their communities to assist teens who are at high risk of pregnancy to access clinical family

planning services. Outreach activities include establishing referral networks, providing information about clinic services to teens in either formal group presentations and/or small groups education and counseling sessions, and one-on-one sessions.

In April 1997 California began the largest statewide teen pregnancy prevention initiative ever undertaken in the United States. This initiative involved a four-tiered approach: (1) the *Public Outreach and Media Campaign*; (2) the *Community Challenge Grant Program*; (3) *Information and Education* local assistance projects, and (4) the *Male Involvement Program*

- *The Public Outreach and Media Campaign* ($8.5 million/year) is a multi-faceted media campaign designed to focus on preventing unplanned pregnancy through four platforms: 1) adult involvement; 2) teen responsibility; 3) male responsibility; and 4) contraceptive services. The media campaign effort is linked to Family PACT, as well as community-based programs, such as Community Challenge Grants, Information and Education, and Male Involvement.
- *The Community Challenge Grant Program* ($20 million/year) was established as part of the 1996 Budget Act. The goals of CCG were to reduce the number of teenage and unwed pregnancies and the fatherlessness that results from these pregnancies, and to promote responsible parenting. The CCG supports locally identified prevention strategies because the most innovative, effective, and culturally appropriate solutions are realized when government partners with the community, parents, and youth.
- *The Information and Education* local assistance projects have been a major component of the community-based reproductive health education effort for more than 25 years. This program's primary goal is to decrease teen and unintended pregnancy through family life education programs that emphasize primary prevention. Youth and adults from throughout the state are reached through 32 projects in a variety of settings.
- *The Male Involvement Program* ($3.7 million/year) was designed to reduce teen pregnancy through promoting primary prevention skills, motivation, and responsibility in adolescent boys and young men. It involved local reproductive health education projects with community-based organizations, and was linked to an outdoor advertising campaign employing English and Spanish-language billboard and bus ads in 26 California counties with high teen pregnancy rates. These ads were to educate males about responsibility for pregnancy prevention and parenthood, and to illustrate the consequences of statutory rape.

California Department of Education's Teen Pregnancy Prevention Grant Program

In 1995, Senate Bill 1170 authorized the Department of Education (CDE) to create teen pregnancy prevention programs in counties with the highest teen birth rates. The *Teenage Pregnancy Prevention Grant Program* (TPPGP), a $50 million, five-year competitive grantmaking initiative, funded 37 local education agencies and their community partners in 25 counties to support students in elementary and secondary schools in delaying the onset of sexual activity and reducing the incidence of teenage pregnancy. SB 1170 required TPPGP programs to target youth living in counties with the highest teenage birth rates and with demonstrated risk factors, including poverty, low basic skills, low academic achievement, a sibling or a parent who was a teenage parent, evidence of multiple risk behaviors, and low self-esteem. Potential

grantees were directed by CDE to employ strategies that focus on reducing risks and antecedents of teenage pregnancy while enhancing individual protective factors, such as attachment to school and community, connection with adults outside the family, academic success, and high expectations for the future. A variety of comprehensive approaches were funded, all incorporating community partnerships and parent involvement.

Funding for a rigorous statewide evaluation of this program was not provided for by SB1170. A variety of outcome data, however, were collected by most grantees over several years as mandated by the legislation. Based on reviews of these data at each site by a health-policy evaluation group at the University of California, San Francisco (Cagampang et al., 2002), the following recommendations for effective programs were derived:

1. Combine age-appropriate, well-researched, and comprehensive family life education with youth development strategies;
2. Introduce pregnancy prevention education, including decision-making and youth development, before students become sexually active;
3. Target communities with the highest teen birth rates;
4. Ensure fidelity to the published, rigorously evaluated curriculum;
5. Increase teachers' expertise in family life education through appropriate staff development;
6. Help parents understand and address the complex issues related to adolescent development;
7. Institutionalize pregnancy prevention education in district-adopted health curricula;
8. Support local leadership and family-school-community collaboration;
9. Explicitly focus on enhancing learning support systems;
10. Provide reproductive health referrals for sexually active teens; and
11. Employ bilingual staff to more fully involve parents.

Funding for the TPPGP initiative expired in 2001 and has not been re-allocated.

Investments by Philanthropic Foundations

During the last decade, California philanthropic foundations have invested heavily in teen pregnancy prevention and adolescent sexual health in the state. These investments have been made at both community and statewide levels, involving funding for community collaborations, school-linked programs, policy analysis and education, media campaigns, and program evaluation, among other strategies. Investors have included the Alliance Healthcare Foundation, Annie E. Casey Foundation, The California Endowment, The California Wellness Foundation, Compton Foundation, S. H. Cowell Foundation, East Bay Community Foundation, William and Flora Hewlett Foundation, The David and Lucile Packard Foundation, Peninsula Community Foundation, The San Francisco Foundation, Sierra Health Foundation, and the Stuart Foundation. The level of combined commitment has been extraordinary.

Distinguished by the depth and breadth of its long-term investment in this area, the California Wellness Foundation's *Teen Pregnancy Prevention Initiative* (TPPI) is a 10-year, $60-million grantmaking program involving a focused, long-term commitment of resources to address the issue of teen pregnancy in California. The overall goal of the TPPI is to decrease the incidence of teen pregnancies by:

- expanding the perception of teen pregnancy from an individual and family problem to include the view that it is also an adult/social problem by increasing the public understanding of the role played by the environment in teen pregnancy and disease prevention;
- establishing and reinforcing community norms that value healthy adolescent sexuality and do not sanction pregnancies and high-risk sexual behavior; and
- increasing the number of teens who delay the initiation of sexual activity and who use contraception effectively during sexual activity.

Central to this grantmaking program is the belief that the problem of teen pregnancy remains largely an adult issue — one shaped, determined, and perpetuated by the attitudes and behavior of adults, and one for which adults bear the primary responsibility for solving. Although adolescents must be responsible for their own behavior, they are largely powerless to control their own environment (e.g., education, economic and family circumstances, and availability of health services). Adults continue to create and contribute to the specific circumstances that allow teen pregnancy to flourish by failing to resolve their own ambivalence about sexuality, transmitting confusing messages about healthy sexuality, and by failing to provide comprehensive sexuality education and easy, affordable access to reproductive health care for teens.

The grantmaking program of the Teen Pregnancy Prevention Initiative consists of four interrelated components:

- *The Research Program* focuses on filling current gaps in knowledge about sexual development and adolescent pregnancy, conducting additional analyses of existing data, and reviewing and compiling information about effective pregnancy prevention program design.
- The *Public Education/Policy Advocacy Program* has focused on increasing public understanding of teen pregnancy as an adult/social problem and promoting awareness of, and support for, the concept of healthy adolescent sexuality. In order to shape the social/community norms and the political environment supportive of programs and policies, the *Public Education Program* creates messages and delivery methods for a variety of audiences. The program also encompasses local public education and media efforts appropriate for the Community Action Program sites (as described below). The *Policy Advocacy Program* informs policymakers and opinion leaders about effective public policies to promote healthy adolescent sexuality and prevent teen pregnancies. The focus is on advocating for the development of public policies and associated institutional changes that reduce teen pregnancies.
- *The Community Grants Program* encompasses two grantmaking programs. The *Community Action Program* (CAP) involves California communities, or CAP sites, that are funded to demonstrate that teen pregnancy rates can be reduced through community organization and action focused on promoting healthy adolescent sexuality

and effective contraceptive use. Sites provide a sustained, communitywide program of intervention that focuses on ensuring that teens in these communities are provided with a message of healthy and responsible sexuality that includes support for a range of behaviors from abstinence to effective contraceptive use. The *Community Support Program* (CSP) is intended to increase the capacity of communities with high levels of teen pregnancy to address adolescent sexual health and teen pregnancy prevention. CSP offers youth-serving agencies, located in or serving high-need communities, the opportunity to become more experienced and skilled in the implementation of teen pregnancy prevention strategies.

- *The Professional Development and Leadership Recognition Program* was designed to increase knowledge and skills among health care and social service providers and educators about healthy adolescent sexuality, effective teen pregnancy prevention interventions, culturally appropriate services, and public education needs through information dissemination, seminars, and workshops at the CAP sites.

Return on Investment

When taken together, there can be little doubt that California's unprecedented investment in teen pregnancy prevention has contributed to California's achievement over the last decade of the largest decline in teen birth rates, and second largest percentage reduction (after Alaska) of all 50 states. This achievement is all the more noteworthy because it occurred during a period when the highest teen birth rate group, Latinas, increased as a proportion of the total teen population in California, with this demographic transformation occurring more rapidly in California than for the U.S. as a whole.

It is difficult to disentangle the effects on California's teen birth rate of each of these separate but synergetic investments. Further, with the last decade's decreases in poverty rates, as well as the fundamental changes in welfare policy occurring nationally and in California, precise attribution of causality for California's teen birth rate reduction becomes even more challenging. Yet all states experienced poverty rate declines and welfare reform, however, California's investments in comprehensive and exemplary programs and policies have been much more extensive and fundamentally different than those of other states. It is therefore both reasonable and logical to attribute at least part of California's advantage in teen birth rate reductions to these investments.

The cost of these investments has not been small — the estimated combined total state and philanthropic investment during the 1998–1999 budget year was approximately $60 million for programs and activities focused directly on teen pregnancy prevention, plus another $68 million representing the 20% of total Family PACT resources focused on teens. A reasonable estimate of California's total annual investment is therefore $128 million. Yet the unparalleled 40% reduction in California's annual teen birth rate over the last decade represents 35,000 fewer teen births in 2001 than the 89,000 that would have occurred had the teen birth rate remained at its 1991 level. **Translated into annual costs averted, this represents an annual**

savings to taxpayers of $968 million, and a total annual savings to society of $2.2 billion[11]. By any standard this is an excellent return on investment.

But California's achievements are now at risk. Due to projected demographic changes as well as the leveling off and expected turnaround of poverty rate decreases, combined with recent and proposed cuts in funding these investments, the California teen birth rate decline is expected to reverse within the next few years — and this reversal might be already underway. If these threats to California's achievements are not met head on, the current $1.5 billion annual cost to taxpayers, and the $3.3 billion total annual cost to society, will increase substantially.

To build on California's successes — to maintain the progress of the last decade, to accommodate new challenges, and most ambitiously and importantly, to increase these levels of success by further decreasing teen birth rates — requires courage, wisdom, and persistence in a time of both severely limited state funds, and the increasing drift of federal support away from effective research-based strategies. Yet the enormous need, and tremendous expected return on investment, is abundantly clear from our experiences of the last decade.

[11] This does not include additional cost savings associated with prevention of sexually transmitted diseases, including HIV/AIDS.

Policy Recommendations

All levels of government are facing unprecedented challenges that are forcing them to examine their priorities. At this time, the prevention of births to teen mothers is more important than ever. Investments in this area are productive for their immediate payoff in terms of decreased health care costs as well as their contribution to the stability of the social fabric and to California's economic future. In this light, the Public Health Institute and the Center for Research on Adolescent Health and Development provide the following recommendations in the areas of leadership, programs, educational policy, and schools and communities. A more detailed set of specific recommendations is provided in Appendix A.

Programs

- At a minimum, all program funding aimed at reducing teen pregnancies and births must be maintained.
- California continue to decline participation in and contribution of matching funds for the federal abstinence-only-until-marriage education program.
- California continue to fund effective school- and community-based programs that provide education, outreach, and services to support teens in delaying childbearing.

Leadership

- Elected officials step up to the plate and initiate community dialogues by bringing together parents, adolescents, and other school and community stakeholders to address the issue of high teen birth rates and to determine what additional steps can be taken.

Educational Policy

- California provide for enforcement of existing education standards that require medically accurate information to be taught in school-based sexuality education programs.
- California revise and strengthen California Education Code to clarify and consolidate the minimal standards for comprehensive sexuality education instruction.
- California begin discussion and development of a legislative mandate for California public middle schools, high schools, and alternative schools to teach research-based comprehensive sexuality education.
- California support reliable and complete school-based survey research that will elicit scientific understanding of teen health risk behaviors, including sexual risk behaviors.

Schools and Communities

- Schools and communities provide multi-level comprehensive sexuality education and youth development programs, with school, parent, youth, and community components working in synergy.
- Schools and communities review and monitor school polices and curricula to assess compliance with California Education Code, and to bring these policies and curricula into compliance as necessary.

Appendix A. Detailed Policy Recommendations

State Government

- Continue to decline California's participation in and contribution of matching funds for the federal abstinence-only education program.
- Begin discussion and development of a legislative mandate for California public middle, high, and alternative schools to teach research-based age-appropriate comprehensive sexuality education.
- Restore funding to 1999 levels for the California Department of Health Services, Office of Family Planning, programs including (1) the Public Outreach and Media Campaign; and (2) Information and Education local assistance projects.
- Restore funding to 1999 levels for the California Department of Education's Teen Pregnancy Prevention Grant Program, and HIV/STD Prevention Program.
- Expand the Family PACT provider network to reflect population growth and demographic changes, as well as anticipated increases in the poverty rate.
- Provide funding for expanded marketing and outreach of Family Pact to teens.
- Allocate funding to the California Department of Education for monitoring compliance of school districts with California Education Code related to sexuality education.
- For school-based health behavior surveys in California, allow parental notification and the opportunity to decline participation in place of requiring written parental consent.
- For school-based health behavior surveys in California, especially at the statewide representative sample level, provide for collection of anonymous self-reported sexual risk behavior data from high school and alternative school students at the level of detail found in the federally sponsored Youth Risk Behavior Survey. Currently, California is one of the few states that does not provide these data, thereby placing it at a disadvantage in monitoring changes and trends in these behaviors and evaluating effectiveness of statewide programs
- Revise and strengthen California Education Code to clarify and consolidate the minimal standards for comprehensive sexuality education instruction in kindergarten and grades 1 to 12, and for mandated HIV/AIDS prevention education for all pupils in grades 7 to 12.
- Maintain funding for the California Healthy Kids Resource Center to review and disseminate effective research-based sexuality education programs.
- Continue funding for After School Education, Healthy Start, and other research-based youth development programs.

California Philanthropic Foundations

- Continue to fund community programs, policy analysis and advocacy, media campaigns, leadership development, and surveys, evaluation, and other research in support of teen pregnancy prevention in California.
- Fund a consensus process by a respected California public health organization for development and promotion of recommended guidelines for school-based sexuality education in California. These standards should be consistent with existing national guidelines developed by the *National Commission on Adolescent Sexual Health* and the *National Sexuality Education Guidelines Task Force*, while at the same time specifically sensitive to California's demographics, local concerns, and other unique needs.
- Fund new research to investigate the challenges in generating and effectively employing community support for school-based comprehensive sexuality education.
- Fund new research to further investigate California's successes relative to other states, and the causes, correlates, and consequences of these successes.

Schools and Communities

- Review and monitor school polices and curricula to assess compliance with California Education Code, and to bring these policies and curricula into compliance as necessary.
- Provide multi-level comprehensive sexuality education and youth development programs, with school, parent, youth, and community components working in synergy. Include research-based best practice programs and curricula, such as those provided by the California Healthy Kids Resource Center.
- Review, discuss, and endorse the National Commission on Adolescent Sexual Health (1995) consensus statement (see Appendix B). This statement has been endorsed by more than 50 national organizations, including the American Medical Association, the American School Health Association, the Society for Adolescent Medicine, the Child Welfare League of America, and the YWCA. Determine if school and community policies and programs are consistent with this statement.
- Provide specialized training for all sexuality education classroom instructors.
- Conduct surveys of local schools and districts to determine and evaluate district sexuality education policies and practices.
- Conduct surveys to investigate attitudes, beliefs, and concerns of parents, adolescents, and other school and community stakeholders regarding adolescents' healthy sexual development and risk behavior prevention needs, and potential strategies to meet these needs.
- Educate parents, adolescents, and other school and community stakeholders about the benefits of research-based comprehensive sexuality education and the views of the community.
- Train and support youth to advocate for research-based comprehensive sexuality education. Include topics such as advocacy, working with the media, and the importance of using data to support advocacy efforts.

Appendix B. Consensus Statement on Adolescent Sexual Health

This statement reflects the consensus of the National Commission on Adolescent Sexual Health (1995). It has been endorsed by more than 50 national organizations, including the American Medical Association, the American School Health Association, the Society for Adolescent Medicine, the Child Welfare League of America, and the YWCA.

Becoming a sexually healthy adult is a key developmental task of adolescence. Achieving sexual health requires the integration of psychological, physical, societal, cultural, educational, economic, and spiritual factors.

Sexual health encompasses sexual development and reproductive health, as well as such characteristics as the ability to develop and maintain meaningful interpersonal relationships; appreciate one's own body; interact with both genders in respectful and appropriate ways; and express affection, love, and intimacy in ways consistent with one's own values.

Adults can encourage sexual health by:

- providing accurate information and education about sexuality;
- fostering responsible decision-making skills;
- offering young people support and guidance to explore and affirm their own values; and
- modeling healthy sexual attitudes and behaviors.

Society can enhance adolescent sexual health if it provides access to comprehensive sexuality education and affordable, sensitive, and confidential reproductive health care services, as well as education and employment opportunities. Families, schools, community agencies, religious institutions, media, businesses, health care providers, and government at all levels have important roles to play.

Society should encourage adolescents to delay sexual behaviors until they are ready physically, cognitively, and emotionally for mature sexual relationships and their consequences. This support should include education about:

- intimacy;
- sexual limit setting;
- resisting social, media, peer and partner pressure;
- benefits of abstinence from intercourse; and
- pregnancy and STD prevention.

Society must also recognize that a majority of adolescents will become involved in sexual relationships during their teenage years. Adolescents should receive support and education for developing the skills to evaluate their readiness for mature sexual relationships. Responsible adolescent intimate relationships, like those of adults, should be based on shared personal values, and should be:

- consensual;
- non-exploitative;
- honest;
- pleasurable; and
- protected against unintended pregnancies and STDs if any type of intercourse occurs

Appendix C. Notes on Birth Rate Calculation Methods and Data Sources

Senate and assembly district births and birth rates were calculated using three sources of data:

- zip code specific birth data provided by the California Department of Health Services, Office of Vital Statistics, compiled from the *Birth Statistical 2000 Master File*;
- U.S. Census Zip Code Tabulation Area (ZCTA) population data from the *Census 2000 Summary File 1, Table P12*; and
- zip code to legislative district mapping and proportions provided by Capitol Enquiry, Sacramento, CA, on the *2002 Election District Zip Code File*

For each district, female teen (ages 15 to 19 years) ZCTA population and zip code birth totals were weighted by zip code proportion in the district. District-weighted ZCTA population and zip code specific birth data were then combined to provide female age 15 to 19 population and birth estimates, and birth rates, for each district.

All teen births were linked to zip codes, however some zip codes with very small populations were not linked to a legislative district in the 2002 Election District Zip Code File. As a result, approximately 91% of teen births were assigned to legislative districts while nine percent were not assignable. This is not likely to bias the *teen birth rate* results because both population and births from non-assignable zip codes were excluded together. However, it does add a small negative bias, on average, to the district level *teen birth numbers*; actual district teen birth numbers (and estimated costs) would be on average about nine percent higher than reported here. This applies to the district level results only.

Another consideration regards the population estimates used as the denominator for birth rate calculations. The legislative district analyses in this report employed year 2000 U.S. Census Bureau population data as birth rate denominators, while the federally compiled birth rates from the National Center for Health Statistics (NCHS) reported elsewhere in the report employed population projections based on 1990 U.S. Census Bureau data as birth rate denominators.

NCHS recently published birth rates for 2000 and 2001 adjusted for U.S. Census Bureau year 2000 population data (Ventura et al., 2003). However, because these adjustments are not yet available for years prior to 2000, nor at the individual state level, they were not employed in this report. Overall, these adjustments show that Latina and Asian/Pacific Islander teen populations based on 1990 census projections had been underestimated nationally, and as a result the teen birth rates for these groups had been overestimated (by about 7% for Latinas and about 3% for Asian/Pacific Islanders). However, comparing the most recent California Latina teen birth arte estimate provided by NCHS (for 1999; Ventura et al., 2001), to the rate that results using year 2000 census population data combined with California birth data, and accounting for an expected one-year decrease between 1999 and 2000, shows that the NCHS 1999 estimate of 83.4 per thousand as the California Latina teen birth rate was actually quite accurate.

The California Department of Health Services (Taylor, 2000) independently has provided teen birth rate estimates, based on the same birth numbers employed by the NCHS, but using

California Department of Finance teen population projections as denominators. The latest year for which DHS race/ethnicity-specific estimates are currently available is 1999. Comparing the NCHS and DHS 1999 estimates to estimates based on actual year 2000 census population data suggests that the NCHS estimates for Latina teens were more accurate. Further, only the NCHS estimates allow standardized comparisons across states and between California and the national rates.

Although teen pregnancy rates are sometimes reported and analyzed instead of, or in addition to, teen birth rates, they were not discussed in this report. Teen pregnancy rates can be based on either self-report surveys regarding pregnancy histories, or teen birth rates adjusted for teen abortion and miscarriage rates. California does not collect representative statewide survey data on teen pregnancies, nor does it participate in federal reporting of abortion data. No other sources of teen abortion data are available for California. Teen pregnancy rates for California are sometimes approximated based on estimates of teen abortion rates from neighboring states (e.g., Henshaw & Feivelson, 2000). But these teen abortion estimates are of unknown validity, are not available for specific racial/ethnic groups, and are unresponsive to within-state changes, such as effects of pregnancy prevention programs. Hence, it makes little sense to analyze or discuss teen pregnancy rates for California.

Appendix D. Assembly District Teen Births, Birth Rates, Ranks, and Estimated Annual Costs, Year 2000

DISTRICT	ASSEMBLY MEMBER	COUNTIES IN DISTRICT	TEEN BIRTHS	TEEN BIRTH RATE (PER 1000)	TEEN BIRTH RATE RANK	ESTIMATED ANNUAL TAXPAYER COSTS*	ESTIMATED ANNUAL SOCIETAL COSTS*
1	Patty Berg (D)	Del Norte, Humboldt, Lake, Mendocino, etc.	545	37.5	47	$15,000,000	$34,000,000
2	Doug La Malfa (R)	Butte, Colusa, Glenn, Modoc, etc.	695	44.2	34	$19,000,000	$43,000,000
3	Rick Keene (R)	Butte, Lassen, Nevada, Placer, etc.	521	33.6	54	$14,000,000	$32,000,000
4	Tim Leslie (R)	Alpine, El Dorado, Placer, Sacramento	362	25.9	66	$10,000,000	$22,000,000
5	Dave Cox (R)	Placer, Sacramento	378	32.8	56	$10,000,000	$23,000,000
6	Joseph Nation (D)	Marin, Sonoma	193	17.1	77	$5,000,000	$12,000,000
7	Patricia Wiggins (D)	Napa, Solano, Sonoma	542	39.6	43	$15,000,000	$33,000,000
8	Lois Wolk (D)	Solano, Yolo	584	32.5	57	$16,000,000	$36,000,000
9	Darrell Steinberg (D)	Sacramento	912	61.9	19	$25,000,000	$56,000,000
10	Alan Nakanishi (R)	Amador, El Dorado, Sacramento, San Joaquin	505	37.8	46	$14,000,000	$31,000,000
11	Joseph Canciamilla (D)	Contra Costa	502	35.5	49	$14,000,000	$31,000,000
12	Leland Yee (D)	San Francisco, San Mateo	185	18.2	76	$5,000,000	$11,000,000
13	Mark Leno (D)	San Francisco	319	43.3	38	$9,000,000	$20,000,000
14	Loni Hancock (D)	Alameda, Contra Costa	349	26.9	63	$10,000,000	$22,000,000
15	Guy S. Houston (R)	Alameda, Contra Costa, Sacramento, San Joaquin	248	20.9	72	$7,000,000	$15,000,000
16	Wilma Chan (D)	Alameda	762	62.8	18	$21,000,000	$47,000,000
17	Barbara Matthews (D)	Merced, San Joaquin, Stanislaus	1,132	70.6	10	$31,000,000	$70,000,000
18	Ellen M. Corbett (D)	Alameda	465	36.7	48	$13,000,000	$29,000,000
19	Gene Mullin (D)	San Mateo	231	20.3	73	$6,000,000	$14,000,000
20	John Dutra (D)	Alameda, Santa Clara	335	27.9	61	$9,000,000	$21,000,000
21	Joe Simitian (D)	San Mateo, Santa Clara	326	28.2	59	$9,000,000	$20,000,000
22	Sally J. Lieber (D)	Santa Clara	208	22.3	70	$6,000,000	$13,000,000
23	Manny Diaz (D)	Santa Clara	903	63.4	17	$25,000,000	$56,000,000
24	Rebecca Cohn (D)	Santa Clara	283	26.1	65	$8,000,000	$17,000,000
25	Dave Cogdill (R)	Calaveras, Madera, Mariposa, Mono, etc.	565	41.5	40	$16,000,000	$35,000,000
26	Greg Aghazarian (R)	San Joaquin, Stanislaus	916	57.6	22	$25,000,000	$57,000,000
27	John Laird (D)	Monterey, Santa Clara, Santa Cruz	338	25.0	68	$9,000,000	$21,000,000
28	Simon Salinas (D)	Monterey, San Benito, Santa Clara, Santa Cruz	1,080	67.1	13	$30,000,000	$67,000,000
29	Steve Samuelian (R)	Fresno, Madera	841	53.9	26	$23,000,000	$52,000,000
30	Nicole M. Parra (D)	Fresno, Kern, Kings, Tulare	1,400	91.6	2	$39,000,000	$86,000,000
31	Sarah L. Reyes (D)	Fresno, Tulare	1,601	91.7	1	$44,000,000	$99,000,000
32	Kevin Mc Carthy (R)	Kern, San Bernardino	856	57.7	20	$24,000,000	$53,000,000
33	Abel Maldonado (R)	San Luis Obispo, Santa Barbara	703	43.4	37	$19,000,000	$43,000,000
34	Bill Maze (R)	Inyo, Kern, San Bernardino, Tulare	1,214	73.1	8	$34,000,000	$75,000,000
35	Hannah-Beth Jackson (D)	Santa Barbara, Ventura	500	33.1	55	$14,000,000	$31,000,000
36	Sharon Runner (R)	Los Angeles, San Bernardino	938	55.9	25	$26,000,000	$58,000,000
37	Tony A. Strickland (R)	Los Angeles, Ventura	372	27.9	62	$10,000,000	$23,000,000
38	Keith S. Richman (R)	Los Angeles, Ventura	224	19.2	74	$6,000,000	$14,000,000

39	Cindy Montanez (D)	Los Angeles	1,051	66.3	15	$29,000,000	$65,000,000
40	Lloyd E. Levine (D)	Los Angeles	521	42.9	39	$14,000,000	$32,000,000
41	Fran Pavley (D)	Los Angeles, Ventura	304	28.1	60	$8,000,000	$19,000,000
42	Paul Kortez (D)	Los Angeles	35	6.5	80	$1,000,000	$2,000,000
43	Dario J. Frommer (D)	Los Angeles	298	26.6	64	$8,000,000	$18,000,000
44	Carol Liu (D)	Los Angeles	367	29.8	58	$10,000,000	$23,000,000
45	Jackie Goldberg (D)	Los Angeles	694	64.4	16	$19,000,000	$43,000,000
46	Fabian Nunez (D)	Los Angeles	1,269	87.0	4	$35,000,000	$78,000,000
47	Herb Wesson (D)	Los Angeles	418	34.2	52	$12,000,000	$26,000,000
48	Mark Ridley-Thomas (D)	Los Angeles	1,015	67.7	12	$28,000,000	$63,000,000
49	Judy Chu (D)	Los Angeles	690	48.5	29	$19,000,000	$43,000,000
50	Marco A. Firebaugh (D)	Los Angeles	1,091	68.6	11	$30,000,000	$67,000,000
51	Jerome E. Horton (D)	Los Angeles	781	56.1	24	$22,000,000	$48,000,000
52	Mervyn M. Dymally (D)	Los Angeles	1,206	89.6	3	$33,000,000	$74,000,000
53	George Nakano (D)	Los Angeles	161	18.3	75	$4,000,000	$10,000,000
54	Alan Lowenthal (D)	Los Angeles	704	47.8	30	$19,000,000	$43,000,000
55	Jenny Oropeza (D)	Los Angeles	611	50.3	27	$17,000,000	$38,000,000
56	Rudy Bermudez (D)	Los Angeles, Orange	717	45.4	32	$20,000,000	$44,000,000
57	Ed Chavez (D)	Los Angeles	948	57.6	21	$26,000,000	$59,000,000
58	Ronald S. Calderon (D)	Los Angeles	584	50.0	28	$16,000,000	$36,000,000
59	Dennis Mountjoy (R)	Los Angeles, San Bernardino	555	34.8	50	$15,000,000	$34,000,000
60	R. "Bob" Pacheco (R)	Los Angeles, Orange, San Bernardino	310	21.0	71	$9,000,000	$19,000,000
61	Gloria N. McLeod (D)	Los Angeles, San Bernardino	1,133	66.3	14	$31,000,000	$70,000,000
62	John Longville (D)	San Bernardino	1,289	77.1	7	$36,000,000	$80,000,000
63	Robert D. Dutton (R)	Riverside, San Bernardino	510	38.5	45	$14,000,000	$31,000,000
64	John J. Benoit (R)	Riverside	636	43.8	35	$18,000,000	$39,000,000
65	Russ Bogh (R)	Riverside, San Bernardino	759	56.4	23	$21,000,000	$47,000,000
66	Ray Haynes (R)	Riverside, San Diego	755	47.6	31	$21,000,000	$47,000,000
67	Tom Harman (R)	Orange	276	25.6	67	$8,000,000	$17,000,000
68	Ken Maddox (R)	Orange	473	38.7	44	$13,000,000	$29,000,000
69	Lou Correa (D)	Orange	1,131	85.8	5	$31,000,000	$70,000,000
70	John Campbell, III (R)	Orange	142	10.9	79	$4,000,000	$9,000,000
71	Todd Spitzer (R)	Orange, Riverside	291	24.7	69	$8,000,000	$18,000,000
72	Lynn Daucher (R)	Orange	587	44.9	33	$16,000,000	$36,000,000
73	Patricia Bates (R)	Orange, San Diego	490	41.5	42	$14,000,000	$30,000,000
74	Mark Wyland (R)	San Diego	512	41.5	41	$14,000,000	$32,000,000
75	George A. Plescia (R)	San Diego	210	15.3	78	$6,000,000	$13,000,000
76	Christine Kehoe (D)	San Diego	317	33.8	53	$9,000,000	$20,000,000
77	Jay La Suer (R)	San Diego	456	34.7	51	$13,000,000	$28,000,000
78	Shirley Horton (R)	San Diego	644	43.6	36	$18,000,000	$40,000,000
79	Juan C. Vargas (D)	San Diego	1,139	71.8	9	$32,000,000	$70,000,000
80	Bonnie Garcia (R)	Imperial, Riverside	1,293	84.3	6	$36,000,000	$80,000,000

** Costs represent estimates of annual outlays and losses for 13 yearly cohorts of teen births in the pipeline at any given time. Cost analysis methods are described in detail in the report.*

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Additional Materials

This report can be downloaded as a pdf file from http://crahd.phi.org. Also available for download are a 12-page executive summary, together with two-page district summaries for each of California's 40 state senate districts.

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